Space Weather Forecast

Issued on Friday, 29 September 2023 at 13:27 Local

This forecast provides a four day assessment of space weather events. The probabilities stated below are for reaching or exceeding the given levels. For more information about space weather impacts please see the Met Office Space Weather Scales https://www.metoffice.gov.uk/weather/learn-about/space-weather/uk-scales

Space Weather Forecast Headline: Chance of Moderate flares throughout.

Analysis of Space Weather Activity over past 24 hours

Solar Activity: Low activity with only occasional low level common class flares observed. There are eight sunspot regions on the disc, the most notable is in the southeast which has seen some small growth and complexification, but remains a relatively small region. A further region in the northeast has also seen the emergence of small trailer spots, however this region remains simpler. No Earth-directed CMEs (coronal mass ejections) have been observed in the past 24hrs.

Solar Wind / Geomagnetic Activity: A weak CME was observed arriving at 28/2039 UTC. Solar winds remained slightly elevated varying between 420-500km/s throughout. The interplanetary magnetic field, was initially weak, rising to Moderate at 28/2039 UTC. The north-south component was also initially weak, but become predominately negative (southward) and Moderate from 28/2330 UTC. Resultant geomagnetic activity was Quiet to Unsettled (Kp 0-3).

Energetic Particles / Solar Radiation: The count rate of energetic particles (high energy protons) remained at background levels, with no Solar Radiation storms observed.

Four-Day Space Weather Forecast Summary

Solar Activity: Activity is expected to remain at Low to Moderate levels, with isolated Moderate class flares possible.

Solar Wind / Geomagnetic Activity: There are no Earth-directed CMEs. Current slightly elevated solar winds, due to the overnight CME are expected to gradually ease day 1 (29 Sep). The next enhancement is anticipated on day 4 (02 Oct), due to any fast wind enhancement from coronal hole fast winds. Mainly Quiet to Unsettled geomagnetic activity is expected until this enhancement, most likely day 4. Activity is then expected to increase to be Unsettled to Active with a chance of G1 Minor Storms.

Energetic Particles / Solar Radiation: The count rate of energetic particles (high energy protons) is forecast to remain at background levels, but with a very slight chance of minor Solar Radiation storms.

Issued by Met Office Space Weather Advisor, Tel: +44 (0) 330 135 4254 Email: moswoc@metoffice.gov.uk

© Crown Copyright 2023. All Rights Reserved.

Met Office

Space Weather Forecast

Geomagnetic Storms:

Geo-Magnetic Storm Probability (Exceedance)	Level	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC) (%)	Day 2 (00-24 UTC) (%)	Day 3 (00-24 UTC) (%)	Day 4 (00-24 UTC) (%)
Minor or Moderate	G1 to G2	No	5	1	5	30
Strong	G3	No	1	1	1	1
Severe	G4	No	1	1	1	1
Extreme	G5	No	1	1	1	1

Radio Blackouts - X Ray Flares:

X Ray Flares Probability	Level	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC) (%)	Day 2 (00-24 UTC) (%)	Day 3 (00-24 UTC) (%)	Day 4 (00-24 UTC) (%)
Active	R1-R2 M Class	No	30	30	30	30
Very Active	R3 to R5 X	No	1	1	1	1

Solar Radiation Storms - (High Energy Protons):

Radiation Storms Probability (Exceedance)	Level (cm^{-2} sr^{-1} s^{-1})	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC) (%)	Day 2 (00-24 UTC) (%)	Day 3 (00-24 UTC) (%)	Day 4 (00-24 UTC) (%)
Active	≥ S1	No	1	1	1	1
Very Active	≥ S3 *	No	1	1	1	1

* S3 ≥ 10 MeV ≥ 1000 pfu and / or ≥ 50 MeV ≥ 10 pfu. (pfu = $cm^{-2}sr^{-1}s^{-1}$)

Issued by Met Office Space Weather Advisor, Tel: +44 (0) 330 135 4254 Email: moswoc@metoffice.gov.uk

© Crown Copyright 2023. All Rights Reserved.